

What is claimed is:

Sub B1

1. A digital camera capable of flash photography by illuminating a photographic object, the digital camera comprising:

an image sensor for sensing an image of the photographic object, the image sensor including a plurality of photoreceptor elements, the image sensor being adapted for reading an electrical load accumulation of each of the at least one predetermined photoreceptor element among the plurality of photoreceptor elements;

a detector for detecting an amount of the electrical load accumulation of each of the at least one predetermined photoreceptor element due to light exposure on the at least one predetermined photoreceptor element when using a flash exposure for a duration of the flash exposure, and for outputting a corresponding detection signal; and

a controller for accomplishing light adjusting control of the flash exposure based on the thus outputted detection signal.

2. A digital camera in accordance with claim 1, wherein the at least one predetermined photoreceptor element is adapted for being reset to start a new electrical load accumulation from an initial state.

3. A digital camera in accordance with claim 2, wherein the detector can detect the amount of the electrical load accumulation of each of the at least one predetermined photoreceptor element by repeatedly resetting each of the at least one predetermined

photoreceptor element during load accumulation, reading the electrical load accumulation prior to each resetting, and performing cumulative addition of the electrical load accumulation obtained by each reading.

4. A digital camera in accordance with claim 1, wherein the flash exposure is a plurality of high-speed light pulses at predetermined intervals.

5. A digital camera in accordance with claim 4, wherein the controller accomplishes light adjusting control of the flash exposure by controlling a number of the plurality of high-speed light pulses.

6. A digital camera in accordance with claim 1, wherein the outputted detection signal corresponds to an average of the amount of the electrical load accumulation of each of the at least one predetermined photoreceptor element.

7. A digital camera in accordance with claim 6, wherein the average of the amount of the electrical load accumulation of each of the at least one predetermined photoreceptor element is a weighted average.

8. A digital camera in accordance with claim 1, further comprising:

an interpolator for interpolating photographic data of photoreceptor elements, the photoreceptor elements of identical color and adjacent to each of the at least one predetermined photoreceptor element, the interpolator thus generating respective interpolated photographic data for each of the at least one

10       predetermined photoreceptor element; and  
         a data replacement unit for replacing the  
electrical load accumulation of each of the at least  
one predetermined photoreceptor element with  
corresponding replacement data.

9.     A digital camera in accordance with claim 8,  
wherein the replacement data is respective interpolated  
photographic data.

10.    A digital camera in accordance with claim 8,  
wherein the replacement data is an average of  
respective interpolated photographic data and  
electrical load accumulation.

11.    A digital camera in accordance with claim 10,  
wherein the average of respective interpolated  
photographic data and electrical load accumulation is a  
weighted average.

12.    A digital camera in accordance with claim 8,  
wherein the replacement data is a predetermined one of  
respective interpolated photographic data and  
electrical load accumulation.

13.    A digital camera in accordance with claim 1,  
wherein a location of each of the at least one  
predetermined photoreceptor element is adjusted  
according to photographic conditions.

14. A digital camera capable of flash photography by illuminating a photographic object, the digital camera comprising:

5 a flash unit for producing a flash exposure including at least one light pulse;

an image sensor for sensing an image of the photographic object, the image sensor including a plurality of photoreceptor elements, the image sensor being adapted for reading an electrical load accumulation of each of the at least one predetermined photoreceptor element among the plurality of photoreceptor elements;

15 a detector for detecting an amount of the electrical load accumulation of each of the at least one predetermined photoreceptor element due to light exposure on each of the at least one predetermined photoreceptor element when using a flash exposure for a duration of the flash exposure, and for outputting a corresponding detection signal; and

20 a controller for accomplishing light adjusting control of the flash exposure based on the thus outputted detection signal, the controller controlling a duration of the flash exposure.

15. A digital camera in accordance with claim 14, wherein each of the at least one predetermined photoreceptor element is adapted for being reset to start a new electrical load accumulation from an initial state, and

5 wherein the detector can detect the amount of the electrical load accumulation of each of the at least one predetermined photoreceptor element by repeatedly

10 resetting each of the at least one predetermined  
photoreceptor element during load accumulation, reading  
the electrical load accumulation prior to each  
resetting, and performing cumulative addition of the  
electrical load accumulation obtained by each reading.

16. A digital camera in accordance with claim 14,  
further comprising:

5 an interpolator for interpolating photographic  
data of photoreceptor elements, the photoreceptor  
elements of identical color and adjacent to each of the  
at least one predetermined photoreceptor element, the  
interpolator thus generating respective interpolated  
photographic data for each of the at least one  
predetermined photoreceptor element; and

10 a data replacement unit for replacing the  
electrical load accumulation of each of the at least  
one predetermined photoreceptor element with respective  
interpolated photographic data.

17. A digital camera in accordance with claim 14,  
wherein a location of each of the at least one  
predetermined photoreceptor element is adjusted  
according to photographic conditions.

18. A method for light adjusting control of a digital camera capable of flash photography by illuminating a photographic object, the digital camera including an image sensor with a plurality of photoreceptor elements for sensing an image of the photographic object, the method comprising the steps of:

accumulating an electrical load due to light exposure of each of at least one predetermined photoreceptor element among the plurality of photoreceptor elements when using a flash exposure;

detecting an amount of the thus accumulated electrical load of each of the at least one predetermined photoreceptor;

outputting a detection signal corresponding to the thus detected amount of accumulated electrical load for a duration of the flash exposure; and

accomplishing light adjusting control of the flash exposure based on the thus outputted detection signal.

19. A method for light adjusting control of a digital camera capable of flash photography in accordance with claim 18,

wherein the at least one predetermined photoreceptor element is adapted for being reset to start a new electrical load accumulation from an initial state, and

wherein the step of detecting an amount of the thus accumulated electrical load includes:

repeatedly resetting each of the at least one predetermined photoreceptor element during the accumulating an electrical load step;

reading the accumulated electrical load prior to  
each resetting; and

15 performing cumulative addition of the accumulated  
electrical load obtained by each reading.

20. A method for light adjusting control of a  
digital camera capable of flash photography in  
accordance with claim 18, the flash exposure being a  
plurality of high-speed light pulses at predetermined  
5 intervals, wherein the step of accomplishing light  
adjusting control includes controlling a number of the  
plurality of high-speed light pulses.